CACTUS AND SUCCULENT JOURNAL

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Photo by James West

Trichocereus schickendantzii
in Mrs. Max Cohn's Garden, Los Gatos

Price 35c

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Managing Editor, SCOTT E. HASELTON, Room 414, 1240 S. Main St., Los Angeles, Calif.
Advertising Manager, G. A. FRICK, 1800 Marengo St., Los Angeles, Calif.
Editorial Staff: JAMES WEST, 745 Fifth Ave., San Rafael, Calif.
ERIC WALTHER, 2667 McAllister Ave., San Francisco, Calif. EDGAR M. BAXTER, Bellflower, Calif.

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The "Nederlandsche Vereeniging van Vetplantenverzamelaars "SUCCULENTA" (Netherlands Society of Succulent Collectors) sends its best wishes for a happy and prosperous New Year to officers and members of "The Cactus and Succulent Society of America."

May the reign of "old man depression" will come to an end in 1933, that we may say "happy days are here again". Needless to say that our mutual Societies would do the best out of it (better times, many more members!) The Secretary,

Terborg. Gelderland, M. C. KARSTEN.
Holland, December 1932.

I would like to avail myself of the opportunity to congratulate the Editorial Staff and all other people who are contributing to the "JOURNAL" upon the splendid work they are achieving. Every issue is interesting, both in reading and illustrative material.

In the 3½ years of its existence the "JOURNAL" has developed into a most important and distinguished publication on Cacti and other succulent plants. May it continue on the same lines!

The Society is doing well by reprinting Vol. I of Britton & Rose's CACTACEAE. Cacteophiles all over the world will be greatly obliged."

M. C. KARSTEN.

BOOK REVIEW

Western Wild Flowers and Their Stories, Charles Francis Saunders xiv + 320 pp + 54 full page illustrations. Doubleday, Doran & Company, Inc., Garden City, New York, 1933. $3.00.

A history of the best-known wild flowers and flowering shrubs of the Pacific slope, both fact and legend, including the interesting flora of the Southwestern deserts and the myths that have grown around them. A feature of the book is the thumbnail sketches of the early plant collectors, especially of David Douglas who introduced many Western flowers and plants to the gardens of the Old World.

Notwithstanding the many excellent books written by Charles Francis Saunders, this latest book should be of special interest because of its unique treatment. Who has not been interested in the romance of plants with their extremely interesting historical background? Mr. Saunders gives his plants a personality with explanations which makes the naming of plants most interesting.

Although few cacti are mentioned, desert plants are delightfully described. Scientific names do not predominate, but wherever they are used they are accurate. It is not the object of this book to give descriptions of plants but to introduce the reader to plant names "through the literature which is to be found about every plant."

SCOTT E. HASELTON

With readers increasing at the rate of 30,000 a year and income decreasing 25 per cent since 1929, the Los Angeles Public Library faces a serious problem in providing books for an ever-increasing clientele. More than a million books a month are being borrowed and this tremendous use of books is shown in the record of 35,000 volumes worn out annually.

The Los Angeles Public Library is soliciting gifts of books during the week of January 23-28, 1933, to assist in supplying the growing demand for information and recreation through reading. Travel books, business books, popular science, philosophy or good fiction—in fact any good book or magazine of the informational type, will be acceptable. Gifts will be received at the Central Library, 530 South Hope St., Los Angeles, or at any City Branch Library. The Library truck will call for a number of books if request is made by telephoning MUtual 5241.

Photo by James West

Trichocereus schickendantzii Cohn collection, Los Gatos

Trichocereus schickendantzii (Web) Br. & R.

By JAMES WEST

To match Dr. Houghton's picture in the June 1931 issue, Mrs. Max M. Cohn sends these photographs from her own beautiful garden at Little Brook Farm, near Los Gatos. She writes that early last May her plant had 49 buds, all of which developed, 35 flowers being open at one time. The pictures show what a magnificent sight it must have been. The specimen, a cluster of about 50 stems when first planted about three years ago, produced only a few flowers the second year, but evidently likes its home so well that it is now putting forth its best efforts.

Trichocereus schickendantzii is, even when out of flower, one of the handsomest of cacti. Profusely branching from the base, it forms compact clusters of short, many-ribbed stems of a deep velvety green which is set off by the rich brown to amber of the dense armament of short pungent spines. The flowers are white, unscented, their tubes decorated with the curly black hair characteristic of the genus *Trichocereus*.

The species was described by Weber about 35 years ago (as an Echinopsis). Its name may be somewhat ungainly, but it serves to perpetuate the memory of a keen collector. Schickendantz, a school-teacher in Tucuman, in the Northwest of the Argentine Republic, was active in collecting cacti from his district and sending them to Europe for description. Dr. Albert Weber, an Alsatian, Surgeon-general of the French army, was a life-long student of the Cactaceæ; his presence with Napoleon III's army of occupation in Mexico enabled him to enrich his knowledge by extended travels in that country.

Note Regarding *Dudleya regalis*

Since the publication of the description of this species, it has been brought to the attention of the writer that plants of *Dudleya regalis* Johansen were first collected on Prince Island by Mr. George Willets, head of the Los Angeles Museum, and given by him to Mr. W. Lee Chambers, of Eagle Rock. Mr. Chambers in turn sent a specimen to Mr. Hoffman before the latter ever visited Prince Island. We therefore hasten to make amends by placing on record the fact that Mr. Willets was the original collector of the *Regal dudleya*.

In extenuation, it should be mentioned that Mr. Hoffman, about two months before his untimely death, wrote us that he expected shortly to send full notes regarding the Dudleyas he had collected on the various islands. We never received these notes, and proceeded to publication on the assumption that he had not placed them in writing. Two more new species collected by Mr. Hoffman still remain to be described, and these, too, will probably have to be described with the help of only the fragmentary notes that accompanied them.

A List of Annotated Observations on the Remarks of Dr. K. von Poellnitz Concerning A. Berger's Classification of Succulent Euphorbiae
Part II

By LEON CROIZAT

(See illustrations in Part I, December Cactus Journal)

The conflict of classification between Berger and Brown is plainly fundamental. This being the case, I will allow the two classifications to stand apart, at least for the sake of methodical investigation. Logically I will proceed by elimination. First and separately I will study the species that have been proposed by either one botanist only, to wit.: *Euphorbia fimbriata,* Scopoli and *Euphorbia erosa,* Willd. Next I will compare the descriptions of the specimens entered by both authors under the same head, to wit: *Euphorbia mammillaris,* L. The last remaining species: *Euphorbia submammillaris,* Berger, shall not offer difficulty because Brown accepts it in full from Berger.

As the result of a study so conducted we will be supplied with a set of data wholly original, which shall be either interlocking or mutually exclusive.

The foundation of species *fimbriata* goes back to 1786; that of *erosa* to 1813. I shall consider, therefore, *E. fimbriata* first.

Giovanni Scopoli, professor of mineralogy, chemistry and botany in Pavia and Milan, Italy, member ordinary and correspondent of a score of learned academies, a scientist of some reputation and much good standing in his days, is the founder of *Euphorbia fimbriata.* He introduced it to the botanical world in the pages of "Deliciae florae et faunae Insubricae," a volume in quarto, published in Lombardy, Italy, in 1786, being a collection of illustrations and descriptions of "wonderful and pleasurable objects of the flora and fauna of Northern Italy" (this is the English equivalent of the Latin title of the opus).

Scopoli wrote Latin as his alternate mother tongue, and chose to name his Euphorbia: *fimbriata.* He knew, no doubt, that the adjective means: fringed, curly, ragged, and used it apparently for a reason. None of these connotations, however, is a fitting description name of our *mammillaris,* which is generally stiff and most emphatically neither ragged nor curly. Was Scopoli careless of the specific name he published? Let us question him.

The words of Scopoli, translated from the Latin original in full (cfr. Deliciae florae et faunae Insubricae, part III, page 8, table 4—photostat of the table from the original given with this article*) read exactly as follows:

Euphorbia (fimbriata): *Shrubby, angled. Angles sharp, numbering generally 9 at the foot of the main stem. Flowers growing at the apex of the plant, fringed, bracteate. The specimen described is half a foot tall, leafless, obstricted along alternate tracts of the stem not unlike a cactus of the genus Cereus, being almost divided by the obstrictures in separate articles, fleshy, branching. Branches obtuse, becoming slender at the point of junction with the main stem, seven-angled.*

Sharp tubercles protrude from the angles. Tubercles tooth-shaped, tipped with a minute, reddish, acute leaf. Flowers located at the axil of the tubercles, pedunculate. Peduncles cylindric, yellowish, 2 lines long, monocephalous, appearing at the obconic apex of the branches. Calyx green-yellow, bell-formed; margin of the calyx fringed. Bracts 3 to 4, unequal, concolor with the calyx; lobes 5, round, big, obtuse, connected with the calyx; stamens erect in the center of the calyx; ovary above the disc, none. Seeds so far not observed.

Observation: The specimen described was furnished by Signor Marsilio, who originally obtained it from Alep, Syria, and called it Euphorbia polygona.

Culture: in a small pot, in sandy soil. Flowers in green-house during the month of April. It is reproduced in summertime by the mean of side-sprouts which must be taken with discrimination, otherwise the plant itself suffers.

The text I have translated contains everything that Scopoli ever wrote on the subject of species *fimbriata.* Steudel for some reason did not like it, because in Nomenclator Botanicus, II, page 615, he renamed Scopoli's Euphorbia: *Euphorbia Scopoliana,* Steud., allowing the name "fimbriata" to stand for another not succulent Euphorbia established as a species by Roth, in violation of the rules of botanic precedence.

When Boissier came to study succulent Euphorbiae he followed Steudel, and described the plant of Scopoli under Steudel's name: *Euphorbia Scopoliana* (Decandolle, Prodromus, XV, ii, page 87, No. 333—translation from Latin in full) in the following words:

Euphorbia Scopoliana, *Steudel (Nom. Bot. ii, page 615.) Stem erect, seven-angled, branching, with deep furrows. Angles generally straight; tubercles breast-shaped, almost individually distinct, conical, acute. Leaves minute, oblong, concave, acute, deciduous. Floral peduncles at the apex of the branches, bracteate, very short, monocephalous. Calyx bell-shaped; lobes short, fringed; glands ovato-rotund. Suffrutex.*

This species is controversial and I list it exclusively on the strength of the description and illustration of Scopoli. Alep, Syria, is recorded by Scopoli as

* Page 291, December Cactus Journal, page 291.

the origin of the plant, but it can not be doubted that its true habitat is located elsewhere.

The Euphorbia of Scopoli has the habit of Euphorbia mammillaris, and I should take it to be such, but its tubercles are more prominent on the angles, and spines are wholly absent. This notwithstanding, Scopoli claims spines for the tubercles. According to the figure the branches taper at the base and measure one inch in cross section. The floral peduncles are slender, 2 lines long.

This is a good description ex figura and a candid statement of wonder and doubt in the presence of conflicting elements claimed to exist between text and illustration of the plant under study. Boissier remarks that the tubercles are prominent, very distinct, conical, acute, and for this reason alone he feels it is impossible to maintain that Euphorbia of Scopoli is a good type *mammillaris.* He is baffled and embarrassed, though, by Scopoli's claiming that the tubercles are spiny, whereas the plate indicates that the plant is wholly spineless (*omnino inermis,* in Boissier's own words). On the strength of these doubts Boissier lists *E. Fimbriata,* Scopoli, as controversial, and every botanist who has followed him has either avoided the issue, or cut through the Gordian knot with undue haste, doing violence to Scopoli's neat, perfectly clear description of the species he publishes.

Writes Scopoli *(second quotation this time in the original, in part): —Euphorbia fimbriata, fruticulosa, angulata, angulis acuteatis. Ex angulis aculei, dentibus similes, foliolo rufo, acuto, concavo terminati. Flores dentibus interpositi, pedunculati—*

It is clear that the word "aculeus" cannot be translated in this case, as Boissier has done, and everybody else with him, with the word: spine or thorn. The *"foliolo acuto, rufo, concavo"* of the text cannot be a bract upon the spine, because it is meant in the singular and not less than three or four bracts are shown distinctly surrounding the involucre on Scopoli's table. The "aculei" cannot be thorns or spines, because they are described as being shaped in the form of a tooth. Last but not least, Scopoli, having compared the "aculei" to teeth, adds that the flowers are located in between "the teeth" which is properly translated in one way and only one, to wit: the flowers are borne at the axil of the tubercles (this is what the plate shows, too).

If it is true that aculeus is the equivalent of spine or thorn in botanical parlance, it is not less true that "aculeus" means in good Latin not only spine and thorn, also a sharp prominence, an upthrust, a point of most any kind, a protuberance with an edge. Once we realize this, doubt vanishes and the accord between the explicative text and the table of Scopoli becomes apparent. The "aculei" are sharp, conical, almost individually distinct tubercles which are said properly to emerge from the angles, and the plant is indeed wholly spineless.

I will make use of the remarks I have just made at a later stage and will consider at this time *Euphorbia erosa,* Willd., such as Berger had it.

Berger described *Euphorbia erosa,* Willdenow, first in Monatschrift fuer Kakteenkunde, XV (1905) page 29, then in Sukkulente Euphorbien, page 90. From either or both these sources we learn that a plant named by the senders, Messrs. Garde Frères of Collonges, France: *Euphorbia erosa;* was furnished to Berger about 1904; that this plant was of the type *mammillaris,* that is flowered with sessile female flowers; that it carried 10 angles, not regularly arranged, flattened, little prominent (Rippen 10, nicht sehr regelmässig, stumpf und wenige erhaben) divided by transversal lines into six-sided tubercles.

Of *Euphorbia fimbriata,* Scopoli, N. E. Brown gives the description in Flora Capensis, V ii, page 347, l.c., with exclusive and direct reference to Scopoli's opus: Deliciæ floræ et faunæ Insubricæ, iii, page 8, table 4. Brown's description is very detailed and space forbids my quoting it in extenso. The main characters of identification of the type, however, are easy to ascertain and can be quoted for my purpose:

Writes N. E. Brown in part:

Euphorbia fimbriata, Scopoli: *plant 1-3 feet high, leafless, succulent, more or less spiny, erect, branching in a clustered or more or less whorled manner, dioecious. Angles not spirally arranged, 1-1/2 lines prominent, tessellately divided by impressed lines into six-angled, transversely oblong tubercles, 1 1/2-2 lines long, 2 3/4-4 lines broad, very broadly and obtusely subconical with a central whitish scar and a slight but distinct transverse raised line across the middle. Spines (modified peduncles) solitary in the axil of the tubercles, 3-8 lines long, horizontally spreading, more or less clustered in whorl-like groups at irregular distance along the stem and branches, green when young, changing to red and finally grey, bearing about 4 minute, deciduous bracts; flowers clustered at the apex of the branches, solitary in the axil of the tubercles.*

This is a clean cut description of some plant, a *mammillaris,* which has nothing to do with *Euphorbia fimbriata,* Scopoli, because from it it differs by elements not controversial and of the utmost specific importance, as I will indicate:

1st. The tubercles of Scopoli's Euphorbia are sharp, prominent, conical, distinct. Scopoli

could call them "aculei"; Boissier could describe them as conical, acute, and find in their form enough reason why the plant of Scopoli should not be assigned to *mammillaris;* the artist, signor Chiesa, who made the original drawing, could show them very distinct, acute again, and play on them to give its subject-plant a fully characteristic outline. The tubercles of Brown alleged *fimbriata* are in Brown's own words: "very broadly and obtusely subconical" and emerge from flattened angles (1 to 1½ lines prominent). The contradiction between true *fimbriata* of Scopoli and assumed *fimbriata* of Brown could not be more flagrant in the all important specific character of the shape of the tubercles.

2nd. Scopoli's type is generally spineless, whereas Brown's *fimbriata* is distinctly spiny.

No mention or suggestion of the presence of spines is made by Scopoli. The plate shows the plant as wholly spineless. It may not be excluded, however, that some of the floral peduncles illustrated on the plate may persist as isolated, occasional spines. Whatever the case may be, Scopoli's *fimbriata* is distinctly less spiny than N. E. Brown's *fimbriata.*

3rd. The flower described by Scopoli is a male flower, most likely. Its peduncle in the description is recorded as being 2 lines long whereas the plate shows it from 2 to 3 lines long. It seems that length 2 lines is the lowest limit. Alleged *fimbriata* of Brown carries a flower which is either unpedunculate (female) or 1 to 1½ lines pedunculate (male). The difference is noticeable, although I should not care to mention it except in concurrence with all other elements of difference between true and uncorrectly described *fimbriata.*

I am, I believe, sufficiently justified in casting out from the number of valid species *Euphorbia fimbriata,* Scopoli, of N. E. Brown.

This for the negative side of the question. For the positive side I add I do not believe that Scopoli's *fimbriata* is the figment of Scopoli's imagination (let us not forget that Scopoli was a trained observer, well aware of the importance of the different elements of a botanical description) nor the product of the whim of Signor Chiesa who delineated the plant for Scopoli.

In the Spring 1932 I have received from Pasadena, California, one specimen which fits well indeed the description of *fimbriata,* arranged by Scopoli himself. This plant suggests type *mammillaris,* but its tubercles are quite distinct from those of any *mammillaris:* they are sharp, conical, acute, distinct. Spines are absent or replaced by withered floral peduncles; the angles are prominent; acute-lanceolate; small leaves turning reddish before falling cap each young tubercle; the stem is obstricted; last, to glance over its crown of curly, "ragged" offsets is to understand why Scopoli choosed to call the species "*fimbriata*" and to admire the fittingness of the adjective as descriptive of the whole.

This specimen was labeled *Euphorbia Pfersdorfii.* The name *E. Pfersdorfii* or *Pferdorfii* is purely horticultural and I have found it mentioned only by Bailey (Cyclopedia of American Horticulture, Vol. II [1904], page 563) and by Von Fobe (Monatsschrift fuer Kakteenkunde, [1898] page 43). The authors call *E. Pferdorfii* or *Pfersdorfii* one polygonar Euphorbia of the section Anthacanthae, with single, floriferous spines, light-red, stout, 1/3 to ¾ of an inch long. I am indebted to the courtesy of Prof. Van den Houten, of Rotterdam for one specimen of this plant, which is being offered by Dutch and German succulent dealers. *E. Pferdorfii* of horticulture, judging from the specimen I have obtained from Holland (which comes true to the descriptions of Bailey and Von Fobe) is the type correctly called by botanists: *Euphorbia aggregata,* Berger.

I expect to describe in detail *E. Pferdorfii,* of Pasadena, as soon as my specimen flowers. The flowers are the only and last element which must be studied before establishing definitely the identity *Euphorbia fimbriata,* Scopoli = *Euphorbia Pferdorfii,* of Pasadena. I have little fear or doubt in advancing a provisional identification, due to the coincidence of every other element of the specimen I have received and the plant of Scopoli. I submit a photograph of my specimen, which is immature, and am sure some reader possesses a plant which is more developed than the one I have. What the name of it may be, I do not know, for we are suffering from carelessly labeled Euphorbiæ.

Having established at the least that *Euphorbia fimbriata* of Brown is not the plant so described by Scopoli, N. E. Brown's type must remain nameless, pending investigation and correct classification. We know it, however, as a definite *mammillaris* with "tubercles broadly and obtusely subconical, 6-sided" which should furnish us some measure of identification.

(Concluded in next issue)

Contributions Toward a Monograph of the Genus *Dudleya*--V

By DONALD A. JOHANSEN

Dudleya brittonii sp. nov.

Rosettis magnis, solitaribus, similibus illis *D. pulverulentae;* foliis basis lineo-lanceolatis vel oblongo-lanceolatis, 7-11 cm. longis, 4.5-5.5 cm. latis, subplanis, graviter albo-pulverulentis; inflorescentia simili illi *D. ingentis* sed simpliciore; corolla subperlucida; antheris badiis. Media inter *D. ingentem* et *D. pulverulentam.* Ab H. E. Gates in ore vallis inter Ensenadam et Descansonem, California Inferiore collecta.

Rosettes solitary on a short, stout caudex, the latter covered with the withered leaves. Basal leaves numerous, erect or ascending, the younger ones linear-lanceolate, the older oblong-lanceolate and becoming much widened and somewhat swollen at the base, 7-11 cm. long, 4.5-5.5 cm. wide at base of older leaves, flat above the middle but convex on both sides below, with a submedian keel on upper surface and variously ridged on under surface, apiculate to acuminate, often with a red subulate tip, heavily white-farinose, the older leaves becoming deflexed and turning reddish-heliotrope with age (as in *D. pulverulenta*). Flowering stem (usually only one present) arising from withered leaves, erect, stiff but comparatively slender, reddish purple. Cauline leaves horizontal, very thin, mostly long-lanceolate, half encircling the stem, acuminate, light greenish-pulverulent, promptly withering but remaining attached. Inflorescence cymose, 10 cm. across but somewhat narrowed laterally, the branchlets vivid red. Pedicels erect, slender, 7-9 cm. long. Calyx 5 mm. long, cleft to just below the middle, the segments long-lanceolate, acute, bright green. Corolla erect, about 9 mm. long, cleft two-thirds to the base, the segments linear-lanceolate, mucronate, slightly keeled, hyaline or sometimes pale white, the keel showing a yellowish suffusion. Filaments subequal; anthers oblong to ovate, ca. 1 mm. long, maroon preceding dehiscence.

The preceding description is based upon living specimens collected by Mr. Howard E. Gates (his no. 344) at the mouth of a canyon on the west coast just north of the 32nd parallel (about midway between Descanso and Ensenada), Baja California.

D. brittonii is a distinct but nevertheless

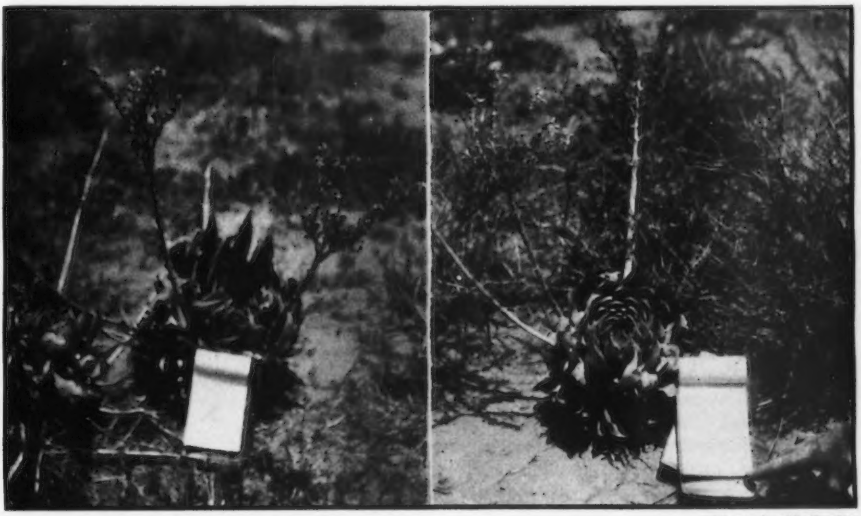

Photo by H. E. Gates

Dudleya viridicata. Type specimen growing at the type locality. (The note book is 4 inches wide.)

Dudleya viridicata. Another specimen growing at the type location.

puzzling form. Mr. Gates had considered it to be *D. ingens*, but it is too small to be that species, differing further in the shape of the basal leaves, character of the pulverulence (white instead of dull grayish), smaller size and simpler character of the inflorescence, color of the flowers, etc. The writer at first thought it might be the very poorly known *D. bryceae* Britton, but it cannot be that species because the leaves are certainly not "pale green, somewhat shining." *D. brittonii* is very distinct from *D. pulverulenta*, the rosettes of which are of much the same size and coloration, but whose inflorescence is radically different. In any event, it seems probable that *D. brittonii* will eventually prove to be a form intermediate between *D. ingens* and *D. pulverulenta*.

It gives us great pleasure to dedicate this strikingly beautiful species to Doctor N. L. Britton, one of the authors of the genus *Dudleya*, and a warm personal friend of Professor Dudley.

Dudleya viridicata sp. nov.

Rosettis magnis solidis colore insolite claro nitentis viridi; foliis basis ligulato-attenuatis, longo-acuminatis, 11 cm. longis, ad basim 2.5 cm. latis, tenuibus et planis, erectis; caulibus florentibus gracilibus, tenuiter erectis, 3.5-6.0 dm. altis, subrubris; foliis caulinis paucis; inflorescentia in nonnullis aequalibus, erectis racemis subrubris 10-25 cm. longis consistente; corolla circiter 9 mm. longa, ad medium fissa, segmentis obscure carinatis, patulis, subalbis cum suffusione subviridi; antheris rubris. Ab H. E. Gates in planitie Capensis Colnetti, California Inferiore collecta. Cognatio non certa.

Apparently acaulescent, the solitary rosettes large, compact. Rosette leaves numerous, crowded and somewhat expanded at the base, ligulate-attenuate, gradually narrowing from upper three-fourths into long-acuminate tips, about 11 cm. long, 2.5 cm. wide at base, thin and flat, submedianly keeled on both sides, erect or the older ones curving inwards, vivid green, shining, turning somewhat reddish-dotted on backs of older leaves. Old leaves brown, curled or rolled, very hard but not crackling when crushed. Flowering stem arising from between older and withered leaves, generally standing straight out and becoming erect only towards the inflorescence, 3.5-6.0 dm. long, rather slender, naked below, reddish. Cauline leaves few, horizontal, long-lanceolate, 1.2-2.5 cm. long, somewhat clasping, acuminate, light green turning reddish. Inflorescence consisting of several equal, elongated, erect secund racemes 10-25 cm. long, reddish. Pedicels slender, clavate, ascending, 6 mm. long. Calyx very deeply cleft, the lobes unequal, long-lanceolate, acute to short-acuminate, ca. 5 mm. long, dark green, shining. Corolla about 9 mm. long, cleft to just below the middle, the segments lanceolate, obscurely keeled, short-acuminate, the tips spreading slightly, pale white with a greenish suffusion on the inside and along the keel. Anthers red preceding dehiscence, ovate, about 0.8 mm. long.

Dudleya brittonii. Type specimen growing in a 6 inch pot, as seen from above.

The description is based upon two of the four living specimens composing Mr. Gates' no. 338, the other two each being very different and probably constituting different species, but as they have not flowered yet, we cannot be certain on this point. The specimens came from the Cape Colnett mesa, Baja California (31° N, 116° 20′ W), which is about a mile from the coast. The plants are distinguished by the unusually vivid green color of the rosettes, whence the specific name. In shade, the color of the flowers becomes slightly yellowish, but we believe that the color should definitely be classified in the white category. The inflorescence of the type specimen was unfortunately removed by an irresponsible person before we had an opportunity of photographing it. However, the general nature is well shown in Mr. Gates' photographs.

The type specimens of both *D. brittonii* and *D. viridicata* are being retained in the writer's own herbarium.

NOTE: The following 8 pages are the 17th installment of the Britton and Rose reprint of Vol. I, The Cactaceae.

Notes on Britton and Rose

Edited by E. M. BAXTER

From Britton and Rose. Appendix Vol. IV.

64a. Opuntia wetmorei sp. nov.

Forming low mounds of considerable extent with hundreds of branches; joints 4 to 10 cm. long, terete, turgid, 2. cm. in diameter or less, slightly tapering towards each end, dull green, but dull purple

FIG 234.—Opuntia wetmorei, fruit, stem, and seeds.

around and especially below the areoles; leaves subtending the minute areoles, 1 to 2 mm. long, caducous; areoles circular, bearing tawny or white wool when young; glochids short, yellowish; spines numerous, very unequal, scarcely pungent, white to straw-colored or brownish, 3 or 4 of lower ones almost hair-like, reflexed or appressed to joints, 3 or 4 of uppermost erect or ascending, flattened, 2 to 3.5 cm. long; flowers not known; immature fruit glabrous at first, dull green, becoming reddish purple especially about the areoles, 3 cm. long, bearing long white bristly spines, especially from upper areoles, deeply umbilicate.

Collected by W. B. Alexander in the barranca of the Tunuyán River near Tunuyán, Mendoza, Argentina, March 22 and 23, 1921.

This species is perhaps nearest *Opuntia darwinii*. We are under great obligation to W. B. Alexander for sending us very fine living plants by Alexander Wetmore, who brought them to us directly from Argentina. Mr. Wetmore was with Mr. Alexander when the plant was collected and he has given us a word picture of the plant; we take pleasure in naming the species for him, not only in recognition of this service but also for obtaining other valuable specimens of cacti.

Figure 234 is from a photograph of the type plant, one-half natural size.

76a. Opuntia alexanderi sp. nov.

Low, depressed, forming a small clump; joints readily detached, grayish green, strongly tubercled, globose, 2 to 3 cm. in diameter, nearly hidden by the numerous spines; areoles small, close together, circular; spines 4 to 12, up to 4 cm. long, flexible, white below, dark above or with black tips, scurfy-

pubescent even in age; flowers not known; fruit red, dry, obovoid, 2 cm. long, lower areoles not spiny, but upper ones bearing 2 to 8 long, white, erect, weak spines overtopping the fruit; umbilicus of fruit depressed; seeds white, 5 to 6 mm. broad.

Collected by W. B. Alexander, between Chilecito and Fanatina, province of La Rioja, Argentina, February 19, 1921. Mr. Alexander studied this species in the field but could not identify it and sent it to us for study. It belongs to the subgenus *Tephrocactus,* but is not near any of the known species. We take great pleasure in naming it for Mr. Alexander, who has extensively studied the cacti in Argentina.

80a. Opuntia abjecta Small, sp. nov.

Prostrate, often growing in large irregular patches on almost bare limestone or where some sand and humus has accumulated, irregularly branched; joints suborbicular, sometimes nearly subglobose, oval, or broadly obovate, mostly 4 to 8 cm. long, very thick, frequently turgid, light green, loosely attached to each other; leaves ovoid to conic-ovoid, 2 to 3 mm. long, ascending and slightly curved upward, green or purplish; glochids yellowish; spines setaceous-acicular, mostly solitary, brown, or reddish purple, mottled light and dark, becoming chalky gray when dry; the larger ones 2 to 6 cm. long; flowers usually solitary on a joint; berry urceolate, 1 to 1.5 cm. long, somewhat tuberculate, red or purple-red, rounded at base; umbilicus relatively broad, concave; seeds few, flattish, about 4 mm. wide.

On edge of hammock, southern end of Big Pine Key, Florida. Type collected in May 1921 by J. K. Small, preserved in the herbarium of the New York Botanical Garden.

Similar to *Opuntia drummondii* but with shorter joints, longer and more slender spines, and different fruit.

Sempervivum tectorum

It was, as near as I can now recall, in the spring of 1908 that I visited the Mission San Juan Capistrano, which was at that time abandoned except for the monthly visits of a priest to hold religious services in one of the rooms which was furnished as a chapel. The old garden was very much run down, but a few plants managed to exist. One was a white oleander which, I afterwards learned, had been raised from a cutting taken from one in the nearby garden of a nephew of Don Pio Pico, the last Mexican governor of California. The other plant was the *Sempervivum tectorum,* some clumps of which were growing, not on the Mission walls, but on the ground. How it came there I do not know. Possibly it, too, may have been brought from one of the neighboring gardens by some of the village women who cared for the chapel and no doubt did something to make the grounds in front of the Mission presentable. I brought back to Pasadena a plant or two of the Sempervivum together with a cutting from a cactus growing beside the Mission *(Opuntia megacantha)* and set them out in our garden where they still are. The Sempervivum has never bloomed, for which reason I never was sure of what it was until Mr. Walther one day identified it for me.

CHAS. FRANCIS SAUNDERS.

A CORRECTION

Attention has been called to the recent article on *Pedilanthus macrocarpus,* which, instead of clearing up the correct name of this plant only adds to the confusion. "Eupedilanthus" is a group of the genus Pedilanthus and not a generic name, so that the correct name of this plant should read *Pedilanthus macrocarpus* Benth. see "The Genera Pedilanthus and Cubanthus and other American Euphorbiaceae by Charles Frederick Millspaugh, 1913."

NEW SUCCULENT BOOK

Realizing the need of a Succulent Book, the Editor is personally endeavoring to arrange for the publication of a 275 page, fully illustrated, book on this subject. There seems to be no greater need connected with our work. One of the aims of this book will be to illustrate the plants which every amateur first obtains and also a series of illustrations of particular interest or of scientific value. This book can be made invaluable to the beginner and of great worth to trained botanists.

The Editor will appreciate any recommendations. Several have already expressed their willingness to cooperate and a mass of valuable material is all ready for publication. No one person can be qualified to prepare a book of this kind as complete and as accurate as we require and we therefore hope that we can obtain the cooperation of those who are specializing in one group of plants.

If you have photographs, copy, suggestions or even financial advice please communicate with Scott E. Haselton, Room 414, 1240 South Main St., Los Angeles, California.

FIG. 89. Prof. and Mrs. Curt Dinter

The Stapelieae

16. Trichocaulons and Hoodias

By ALAIN WHITE and BOYD L. SLOANE

Three of the spiny-stemmed tube-flowered Trichos have yellow flowers. *T. pillansii* N. E. Br., with stems to a foot high, is still closely similar to *T. piliferum* in habit, but it may be at once recognized from its sulphur-yellow flowers, which grow all over the plant stems. The corolla lobes are densely papillate. *T. grande,* as the name implies, is the tallest of all Trichos, the stems sometimes two feet tall. The flowers are greenish-yellow, about three-quarters of an inch across and densely papillate on the lobes. The third yellow-flowered species is *T. alstoni* N. E. Br., and it may easily be recognized by the wholly glabrous flowers. The stems are not more than six inches tall, but the spines are much stiffer than those in the two preceding species and nearly twice as long.

Turning to the tubeless flowers among the spiny Trichos one finds again the purple brown and yellow colors. All these tubeless-flowered Trichos are relatively small plants, the stems never over six inches in height. The best known species is the "Laboratory Tricho", *T. officinale* N. E. Br., with half-inch flowers purple brown on the corolla lobes and yellow at the base, finely puberulous on the inner face. In the 80's of the last century, slices of the stem of this plant, with flowers attached, dried and threaded on strings, found their way into America as a South African cure-all. They were forwarded to the British Pharmaceutical Society for Laboratory investigation, and the Laboratory passed them on to the Kew Herbarium. Dr. Brown commemorated his unusual introduction to this species in the name he gave it, which doubtless has puzzled botanists who did not know the story.

Closely akin to *T. officinale* is the "downy flowered Tricho", *T. pubiflorum* Dtr. But the latter has a hairy outer corona, and it is more prominently pubescent throughout the corolla. Dull-yellow throughout is the "yellow Tricho", *T. flavum* N. E. Br., with corolla smooth or only minutely papillate. Brownish-yellow and without trace of papillae is *T. delaetianum* Dtr.

The three species last mentioned are from South West Africa, just below the Tropic line. *T. officinale* is thought to extend north across the Tropic in Bechuanaland, and thare is at least one other Tropical Tricho in S. W. Africa, *T. pedicellatum* Schinz, so-called because the small papillate dark-purple-brown flowers grow

on short pedicels, about a quarter of an inch long, whereas other Trichos have their flowers closely adhering to the plant stems between the tubercles. A very slight tube-depression is found in *T. pedicellatum,* perhaps a twentieth of an

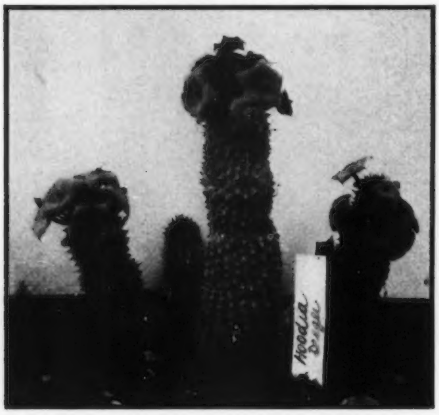

Photo by R. H. Pulleine

FIG. 90. *Hoodia dregei*

inch. In the other species we have called "tube-flowered", the cavities vary from a tenth to a quarter of an inch in depth.

We must end this enumeration of the Trichos as we began it, by regretting our inability to place certain species accurately. Of the stems of *T. perlatum,* Dtr., for instance, Prof. Dinter only says that they are up to six inches in height. This probably is one of the spiny species. The one-third inch flowers are said to have a corolla tube and the corolla is covered with dull rounded whitish papillae.

The corona form of *Trichocaulon* carries over into the genus *Hoodia.* In particular *H. barklyi* Dyer has the deeply cleft outer corona lobes we have found to be so typical of the Trichos. But the aspect of the *Hoodia* stems is quite different from the Trichos. *Hoodias* are the fiercest looking of all *Stapelieae.* The stems are of a characteristically firm texture. There are thirteen ribs or more, tipped along their edges with strong, prominent spines. The stems attain a height of nearly three feet in the "great-flowered Hoodia", *H. macrantha* Dtr., but more usually the species are about a foot high.

The round flowers are noteworthy. The disk of the corolla stretches out almost to the limit of the lobes, forcing these into odd obtuse shapes, which would no longer be recognized as lobes were it not that they have retained their little tips, which are very pointed and sometimes recurved.

Hoodias are of two main types, the hairy-flowered and the hairless. Those with hairy corollas are mostly tropical. *H. dregei* N. E. Br. has the corolla lobes more deeply indented than any other *Hoodia.* It resembles *H. lugardii* N. E. Br., whose "brick-red" flowers have slightly less indented lobes. This species, along with other interesting *Stapelieae,* was discovered in Bechuanaland by Capt. Frederick John Dealtry Lugard (1858-), who led the British West Charterland Company's expedition to Lake Ngami in 1896-97 and who in 1928 was created first Baron Lugard for his distinguished services in Nigeria.

Other hairy *Hoodias* are the "small-flowered Hoodia", *H. parviflora* N. E. Br., from Angola, whose flowers are only an inch in diameter,

Photo by Havens

FIG. 91. W. I. Beecroft

and *H. currori* Decne, from Angola and S. W. Africa, a large species with stems two feet high and reddish round slightly concave flowers, four or five inches broad. Even larger is *H. macrantha,* from S. W. Africa, whose stems are nearly three feet tall, with flowers eight inches across the face, so hairy inside that the purple color of the corolla is hardly visible.

The hairless *Hoodias* are found below the

Tropic. Most important of these is *H. gordonii* Sweet. It is the only plant illustrated in Masson's book which Masson personally had not seen or examined. He learned of it from Lord Gordon, who had found it near the Orange River in Great Namaqualand. The almost cir-

FIG. 92. James West

cular pale yellow flowers, quite flat or slightly cup-shaped, are about four inches in diameter. The center of the corolla is thickly sprinkled with very small dark red papillae. Elsewhere the flowers are wholly glabrous, though the texture is somewhat like velvet.

Any Hoodia flower with the red-dotted papillate center will probably prove to be *H. gordonii,* for there are only two other species having this feature, and both are rare. *H. albispina* N. E. Br., from the Central region of the Cape, is characterized by white spines all over the stems, whereas *H. gordonii* has light brown spines. *H. pillansii* N. E. Br. is a small plant, six inches high, with flowers two and a half inches broad, "salmon-colored with the center a pretty peach-color". *H. gordonii* plants are a foot to a foot and a half tall.

There are five hairless *Hoodias* without the papillate centers. "Thomas Bain's Hoodia", *H. bainii* Dyer, has flowers two and a half to three inches wide, light yellow, sometimes tinged with pink or pale buff, more deeply concave or broadly cup-shaped than *H. gordonii. Hoodia dinteri* Schltr., from S. W. Africa, is very similar to *H. bainii* and may prove to be a synonym for that species.

"Mrs. Jutta Dinter's Hoodia", *H. juttae* Dtr., also from S. W. Africa, has smaller flat flowers, an inch in diameter out on the veldt, two inches or so when grown in cultivation. The color is greenish yellow-brown, turning to dark red-brown as the flowers become older.

There remain two more hairless *Hoodias,* without papillae, *H. burkei* N. E. Br. and *H. barklyi,* both from the Central regions of the Cape. Both are rare and unknown in this country. In fact *H. barklyi* appears to be no longer in cultivation. *H. burkei* greatly resembles *H. gordonii* in stem and flower, but differs by the absence of papillae.

Last of the many-ribbed *Stapelieae* is *Tavaresia,* from the Karroo and Angola. There exists some doubt how far *T. barklyi* N. E. Br. and

FIG. 93. Dr. Robert H. Pulleine

the larger flowered *T. grandiflora* Brgr. may be identical. The flower which passes under these two names in our collections has already been shown in Fig. 7.

In closing our account of the *Stapelieae* it may be timely to tell our readers about the

"Hoodia Club". Membership is limited to collectors who have succeeded in growing plants of the many-ribbed *Stapelieae,* notably the delightful *Hoodias,* and the only duty is mutually to help in their study. The preparation of our articles has been greatly stimulated by the Hoodiers, and it is a special pleasure to include here in closing, photographs of just a few of these kind and helpful men.

The dean of the Club, Dr. N. E. Brown, who knew and grew his *Hoodias* sixty years and more ago, and first coaxed *H. barklyi* into flower at Kew Gardens in 1874 and *H. gordonii* in the following year, has given us encouragement, advice and much detailed help at every stage of our work. We have already been fortunate in presenting his photograph in another issue (November, 1931). Without Dr. Brown there would perhaps have been no general accurate knowledge of the *Stapelieae* at all, a calamity not to be thought of.

The most active members of the Hoodia Club are Professor and Mrs. Kurt Dinter, both discoverers of new species. Our photograph, which has already appeared in the Journal of the German Cactus Society, is here included by special permission of Professor Dinter, who has sent us much information on the *Stapelieae* of South West Africa, including some very valuable sheets from his Herbarium. The services of the entire Dinter family in making a thorough botanical exploration of South West Africa can hardly be overestimated. Between 1897 and 1929 Prof. Dinter covered more than twenty-five thousand miles on foot and by ox-cart and collected altogether upward of eight thousand plants. Among these have been at least twenty-five new species of *Stapelieae,* including some of the most curious and interesting in existence.

The first American Hoodier was W. I. Beecroft, shown in Fig. 91 with a favorite plant of *H. gordonii.* Mr. Beecroft has been of constant assistance, furnishing us with many specimens from his unique collection and contributing excellent photographs from the camera of Mr. Havens of Escondido. Mr. Beecroft has been growing *Hoodias* for four years, and holds the all-American record for the largest number of flowers (seventeen) in bloom on a single plant at one time.

James West needs no introduction to readers of the Journal. He is the Mentor of all American succulent collectors, and to speak of his patience, accuracy and wide botanical knowledge is quite unnecessary here. For the few, however, who do not know him personally, Fig. 91 will be a welcome personal presentation. The picture shows him in pleasant intercourse with a little flowering *Hoodia dregei,* while *Hoodia bainii* and several Trichos wait a chance to put in a word.

Our last photograph is of the Australian collector, Dr. Robert H. Pulleine, who professes never to have studied the *Stapelieae,* but he nevertheless possesses one of the largest existing collections and has sent us many lovely specimens and many photographs. It is pleasant to ponder on what we may expect when the Doctor does go in for the *Stapelieae* more seriously.

To all these members of our Club we offer very hearty thanks, as well as to all others who have been of help. Our study of the *Stapelieae* has brought us, we hope, a little knowledge and certainly much interest, but beyond all this we value the many contacts and good friendships which have welcomed us right around the Globe.

SPINE POINTS by Frick

James West and Prof. Parsons of the University of California, Berkeley, are considering a field trip to Mexico in the near future. They plan to go as far south as Tepic and will include a trip to the Tiburon Island for the purpose of making a survey of the Cacti and to visit with the Seri Indians with whom Prof. Parsons has lived many years.

Carnegea gigantea is not as is popularly supposed the favored nesting site of the woodpecker because of the protection the spines afford. This cactus offers easier pecking than the Mesquite and Ironwood which is the only other available timber in the desert suitable for the birds.

A correction from the Department of Botany, Stanford University:

Re your notes on p. 287 of the November "JOURNAL", may we call your attention to the fact that no species of cactus is native to any continent outside of North and South America. It was established many years ago (in 1898 or thereabouts) that the one or two species of *Rhipsalis* found in Africa were adventive from Brazil and are identical with species still growing in the latter country.

Pulque, the national drink of Mexico is a product of the Agave, and is considered, by the natives, a wholesome and nourishing drink. Mescal, the fire water of that country, which makes the Peon reach for his knife, is obtained by distilling Pulque, thereby making a very strong intoxicating liquor.

Did you know that there is more ultra-violet in the afternoon sunshine than in the morning sunshine? It is well to remember this when planting cactus in either the ground or when placing pots of plants.

With a harvest of over 50,000 aloe and other succulent seeds this year, Dr. Robert Pulleine, of 162 North Terrace, Adelaide, South Australia, wishes to exchange with any of our members for named Echeveria or Dudleya seed. Also he has a particularly fine crop of Crassula seeds and tubers of *Anacampseros australis*. Five hundred seeds of any of these will be sent to anyone sending him the seed he requests.

Plantings of the long lost *Opuntia serpentina*, which was believed extinct for many years, but recently found by W. Lee Chambers in San Diego County is thriving in the collections of three members of the society. These members are making an effort to replenish the number of this species in the limited area in which they occurred.

EDITORIAL

OUR NEW OFFICERS

The new officers for 1933, with the support of last year's officers, are entering their new work with confidence, enthusiasm and many new plans for continuing the work of the last four years. Let us give them our support and take a personal interest in the work of 1933.

The many members of the Society who live outside of Southern California can only view the tireless work of the officers through the results of the CACTUS JOURNAL. It is only through the loyal support of the officers that our JOURNAL can continue with its work which has gained a world wide reputation. You might say, "The work for the Society is a thankless task," but who can say that each recorded issue of the JOURNAL is not an expression of their efforts? This new year will be the most important in the Society's career and will you do your part to make it the most successful?

BRITTON AND ROSE REPRINT

The monthly eight page reprint of Britton and Rose "Cactaceae" Vol. I, has helped to maintain the membership of the JOURNAL. The many letters of appreciation of this work and the new subscribers who date back their subscriptions to the start of the reprint proves the value of this plan. We had hoped to have completed Vol. I by this date yet we feel fortunate to have continued this last year without interruption. We do feel that it should be possible to finance the completion of this work at once and supply it to members so that the pages of the JOURNAL might be devoted to the mass of original material which is encouragingly accumulating. The presubscribed orders of the complete Volume I should cover the costs of the completion of this work. Any recommendations will be gratefully received by the Editor.

SERIES OF ARTICLES

The JOURNAL has appreciated the opportunity of printing the original work of a series of articles such as the Stapelia articles by Alaine White and Boyd L. Sloane. These photographs and engravings which were so generously furnished by the authors of this series have been appreciated by the many readers of the JOURNAL. Articles of this nature place our magazine on permanent files and serve to make it a constant source of information. If you appreciate the work of such contributors write them or send them material so that their work may continue.

This year we are fortunate in having several series of articles for publication; the first being by Mrs. John Wright of Santa Barbara. Howard Gates and Dr. Donald A. Johansen also have a series ready for the February issue.

AN APOLOGY

On page 270, Vol. IV, No. 4 of the CACTUS JOURNAL, in the article, "The Study of the Cactaceae," by F. R. Fosberg, the Editor reduced to "lower case" the first letter of specific names even when based upon personal names. Mr. Fosberg states that even though Britton and Rose and W. L. Jepson do not capitalize the first letter of specific names applied to persons, it is not authoritative compared with the international rules of nomenclature. Mr. Fosberg also states:

"Granted that the rule seems pointless, still the majority of the important botanists of the world consider it of sufficient importance to include in the rules governing their making and maintaining of plant names. Even the American code, which now has no standing whatever, adopted this rule in 1907 or thereabouts."

The policy of the JOURNAL has been to follow Britton and Rose as closely as possible and to encourage uniformity. If all specific names were truly descriptive then there might be a better argument for capitalization yet it seems far more a uniform system to capitalize generic names and no capitals in specific names. The Editor will endeavor to follow this system unless otherwise requested.

ENGLAND'S CACTUS JOURNAL

The Cactus and Succulent Society of Great Britain was formed March 8, 1932 with Sir William Lawrence as President. There are now 243 members who publish a magazine "The Cactus Journal" quarterly. The price is 10 shillings payable to Hon. Sec. E. Shurley, Park St. 26, Near St. Albans, Herts, England. The Editor is Mrs. V. Higgins, 28 Northampton Road, East Croyden, Surrey, England. The magazine has 20 pages and is similar in size and style to our own CACTUS JOURNAL. The English Society is not affiliated with our American Society but we are extremely glad to welcome them to the cactus world and wish them all success. The Editor of the American CACTUS JOURNAL wrote, almost indignantly, to our English friends warning them of the confusion of two magazines of the same name but evidently without results. It seems that in 1898 there was a magazine started in England called "The Cactus Journal" and lasted about two years. Thirty-two years later we started our own CACTUS JOURNAL and after four years it has become known as the leading Cactus magazine of the world and has received international support. We regret that our English friends do not recognize the effort we have made to avoid confusion and we feel that the reference to cactus magazines is as important as the reference to plants. The style of the cover design of the English Cactus Journal, the style of headings and even the page size has been changed from the early English Cactus Journal to that of our own. It is to be hoped that both Societies may prosper and that they will cooperate for the good of the work both are undertaking.

SCOTT E. HASELTON

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